

What is claimed is:

- 1 1. A method for driver selection, comprising:
  - 2 determining a current location identification;
  - 3 determining a destination location identification;
  - 4 determining a distance between the current location and the destination
  - 5 location;
  - 6 enabling a driver strength according to the determined distance.
- 1 2. The method of claim 1, wherein determining a current location identification
  - 2 comprises interpreting hard-wired identification location bits of the driver.
- 1 3. The method of claim 1, wherein determining a destination location
  - 2 identification comprises reading a plurality of destination location bits appended to a
  - 3 data packet.
- 1 4. The method of claim 1, wherein determining the distance between the current
  - 2 location and the destination locations comprises determining a logical subtraction of
  - 3 the destination location bits and the hard-wired identification location bits.
- 1 5. The method of claim 4, wherein determining the distance further comprises
  - 2 encoding the logical subtraction result bits in an encoder.
- 1 6. The method of claim 1, wherein enabling the driver strength comprises
  - 2 enabling legs of the driver according to the determined distance.

1 7. A method for configuring driver size in a legged driver system, comprising:  
2 determining a spatial location of a driver;  
3 determining a destination location of a packet at the driver;  
4 determining a distance between the spatial location and the destination  
5 location;  
6 setting driver strength according to the determined distance.

1 8. The method of claim 7, wherein determining a spatial location of a driver  
2 comprises interpreting hard-wired location information for the driver.

1 9. The method of claim 7, wherein determining a destination location of a  
2 packet at the driver comprises interpreting destination identification bits in the data  
3 packet.

1 10. The method of claim 7, wherein determining a distance comprises logically  
2 subtracting the destination location from the spatial location.

1 11. The method of claim 7, wherein setting driver strength comprises enabling  
2 legs of the driver sufficient to power transfer over a data bus of the packet from the  
3 spatial location of the driver to the destination location.

1 12. A method for forwarding packets in a legged driver, comprising:  
2 enabling sufficient legs in the legged driver to power a transfer of a packet  
3 from an input location to an output destination.

1 13. The method of claim 12, wherein enabling sufficient legs comprises:  
2 determining a spatial location of the legged driver;  
3 determining the output destination;  
4 determining a distance from the legged driver to the output destination; and  
5 enabling the legs based on the determined distance.

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1 14. Apparatus for forwarding data packets, comprising:  
2 a controller operatively connected to receive header information from a data  
3 packet, the controller to generate leg enable bits; and  
4 a driver having a plurality of legs, the driver operatively connected to receive  
5 leg enable bits from the controller and to receive data packets.

1 15. The apparatus of claim 14, wherein each of the legs of the driver is identical.

1 16. The apparatus of claim 14, wherein each of the legs of the driver has a  
2 different power.

1 17. The apparatus of claim 16, wherein each subsequent leg of the driver is twice  
2 as powerful as the previous leg.

1 18. The apparatus of claim 14, wherein the controller comprises:  
2 a subtractor having a plurality of inputs connectable to receive data packet  
3 header information bits (DID) and spatial location identification bits  
4 (LID), the subtractor to generate subtract bits indicative of the  
5 distance between the apparatus and a destination location for the data  
6 packet; and  
7 an encoder to receive the subtract bits and to encode a plurality of enable bits  
8 to enable legs of the driver according to the distance between the  
9 apparatus and the destination location.

1 19. The apparatus of claim 18, wherein the encoder comprises:  
2 a NOR gate having two inputs connectable to a pair of external signals  
3 representative of a difference in a driver location and a destination  
4 location, and an output;

5 a NAND gate having two inputs connectable to the pair of external signals,  
6 and an output; and  
7 an inverter connectable to one of the pair of external signals, the outputs of  
8 the NOR gate, NAND gate, and inverter representative of encoder bits  
9 indicating a number of driver legs to be enabled.

1 20. Apparatus for efficient forwarding of data packets, comprising:  
2 a driver having a plurality of legs selectively enableable to provide different  
3 driver powers; and  
4 a logical subtractor to receive data packet destination information and driver  
5 location information and to generate enable signals representative of a  
6 distance between the driver location and the destination location to  
7 selectively enable legs of the legged driver.

1 21. The apparatus of claim 20, and further comprising:  
2 an encoder operatively connected between the driver and the subtractor to  
3 receive the enable signals and to encode the enable signals to control  
4 the driver strength.

1 22. The apparatus of claim 21, wherein the encoder comprises:  
2 a NOR gate having two inputs connectable to a pair of external signals  
3 representative of a difference in a driver location and a destination  
4 location, and an output;  
5 a NAND gate having two inputs connectable to the pair of external signals,  
6 and an output; and  
7 an inverter connectable to one of the pair of external signals, the outputs of  
8 the NOR gate, NAND gate, and inverter representative of encoder bits  
9 indicating a number of driver legs to be enabled.

1 23. A legged driver, comprising:  
2 a plurality of driver legs, the driver legs sequentially enableable by a set of  
3 external enable signals to provide multiple driver strengths.

1 24. The driver of claim 23, wherein each of the plurality of legs is identical.

1 25. The driver of claim 23, wherein each of the plurality of legs has a different  
2 strength.

1 26. A driver encoder, comprising:  
2 a NOR gate having two inputs connectable to a pair of external signals  
3 representative of a difference in a driver location and a destination  
4 location, and an output;  
5 a NAND gate having two inputs connectable to the pair of external signals,  
6 and an output; and  
7 an inverter connectable to one of the pair of external signals, the outputs of  
8 the NOR gate, NAND gate, and inverter representative of encoder bits  
9 indicating a number of driver legs to be enabled.

1 27. Apparatus for forwarding data packets, comprising:  
2 a driver having a plurality of legs, the driver to provide different power levels  
3 to forward a data packet, the power levels dependent upon a distance  
4 between the driver and a destination location of the data packet; and  
5 means for determining the distance between the driver and the destination  
6 location and to set a driver power level sufficient to forward the data  
7 packet.